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by
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The synthesis, X-ray structural characterization, and reactivity of a number of novel metallacarborane compounds including those that exhibit n^5-dicarbollide ligands bound to aluminum, silicon, and 4f-block elements are discussed. These compounds include the first sandwich compounds to contain main group elements in their highest formal oxidation states, [commo-3,3'-M(3,1,2-$MC_2B_9H_{11})_2]^{n-}$ (M = Al, n = -1; M = Si, n = 0), and the first examples of lanthanacarboranes, closo-$C_2B_9H_{11}Ln(THF)_4$ (Ln = Sm, Yb) and [3,3-$(THF)_2$-commo-3,3'-Sm(3,1,2-$SmC_2B_9H_{11})_2]^-$.

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THE SYNTHESIS AND STRUCTURAL CHARACTERIZATION OF CARBORANE DERIVATIVES CONTAINING MAIN GROUP AND f-BLOCK ELEMENTS

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Abstract The synthesis, X-ray structural characterization, and reactivity of a number of novel metallacarborane compounds including those that exhibit η^5-dicarbollide ligands bound to aluminum, silicon, and 4f-block elements are discussed. These compounds include the first sandwich compounds to contain main group elements in their highest formal oxidation states, [*commo*-3,3'-M(3,1,2-$MC_2B_9H_{11})_2]^{n-}$ (M = Al, n = -1; M = Si, n = 0), and the first examples of lanthanacarboranes, *closo*-$C_2B_9H_{11}Ln(THF)_4$ (Ln = Sm, Yb) and [3,3-$(THF)_2$-*commo*-3,3'-$Sm(3,1,2\text{-}SmC_2B_9H_{11})_2]^-$.

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